

130 BC.

VIA EGNATIA built

c130-110BC

QUMRAN was built by Essenes  
Destroyed by Earthquake 3 BC

the Egyptian year by studying several years' worth of solstices to come up with a reasonably close approximation of the true solar year.

365 days 5 hours 55 min.  
some 6 min too long.

130BC

Duncan:Cal

Hipparchus (fl. 146-127 BC)

discovered the precession of the equinoxes, a slow shift westward of the equinoctial points against the stars, something Isaac Newton much later determined was caused by the very subtle gravitational tug of the moon and sun on the earth. He confirmed the accuracy

C 130 BC

Duncan; Cal

141-127 BC HIPPARCHUS

length of year

365 days 5 hours 55 min.

$$= 365.2465277$$

$$\approx 365.2422$$

130BC

The astronomer Hipparchus (fl 146-127BC) discovered the precession of the equinoxes (a slow shift westward of the equinoctial points against the stars).

He came up with an approximation of the true solar year: 365d, 5h, and 55 minutes, some six minutes too long.

C130 Be

205-120 BC

1912 Dates J-BK

Fifty books of "History"  
of which we have 5 complete  
and considerable portions of  
18 others by  
POLYBIUS

(about 205-120 BC) the chief  
Greek historian of this period.

constellation PISCES and is approaching  
AQUARIUS

moon also precesses with period of  
18.5 or 18.6 yrs causing a sine wave  
in the Earth's precession circle = nutation

130 BC

## Precussion of EQUINOXES

Earth's axis changes its direction in about  
25,800 or 25,900 yrs period

North CELESTIAL pole describes a  
small circle around north ECLIPSE pole  
with consequent Westward drift of the  
equinoxes

HIPPARCHUS in 130 BC first noticed

Then Vernal equinox was in constellation  
Aries: Now Vernal Equinox is in

130 B.C.

the phenomena of precession  
of the equinoxes was discovered

130BC

PHYS<sup>e</sup> Driven from his throne  
by Cromwell Egypt

130 - 127 BC

Selucid Parthian War  
Antiochus VIII was initially  
successful, but killed at  
~~ECBATANA~~. Parthian Congress  
East of Euphrates

130 BC

Greek Astronomer Hipparchus uses the position of the moon's shadow during a solar eclipse to estimate the distance to the Moon ( accurate to about 137<sub>o</sub>)

130 BC

Hipparchus was the first  
to observe that the solar year  
is not exactly 365.25 days  
long

123/2

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Tribunate of Davis Isroodus

130 B.C.

Greek astronomer Hipparchus  
calculated the precession  
of the equinoxes  
(about 50 sec of arc)

every year.

Takes 25,800 yrs for earth's  
axis to complete one motion

130 BC

Bactria declined after  
capture by nomadic  
Sakas.

130 BC

Hipparchus first observed that the solar year is not exactly 365.25 days long.

This was not incorporated in Greek calendars.

The Greeks continued to use the same 3 intercalations in 8 yrs that they used in the 6th cen. B.C.

of determining LATITUDE and LONGITUDE.

C130BC

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HIPPARCHUS. Greek scientist, the father of systematic ASTRONOMY, who compiled the first star catalog and ascribed stars MAGNITUDES. Made a good estimate of the distance and size of the moon. Probably first to discover PRECESSION. Invented many astronomical instruments. Worked on plane & spherical geometry. Suggested ways

131 BC

VIA POPILLIA (1) built.

VIA, POPILLIA (2) built. This road is also called the VIA ANNIA, and there is still doubt who is responsible.

131 B.C

VIA ANNULIA (2) built.  
may be VIA POPILLIA

of the Roman Army, the Consul PERPERNA  
(succeeded Cosans), speedily marched over  
into Asia and surprised ARISTONICUS,  
who was resting after his recent victory.  
Perperna annihilated his army and forced  
him to flee back to the city of STRATONICA PA, which  
Perperna besieged. Reduced Aristonicus  
to starvation and compelled him to  
surrender. Perperna was taken ill  
at Pergamum and died. Aristonicus  
by order of the Senate was strangled in a Roman  
prison.

131 BC

Publius Licinius Crassus, Consul and Pontifex Maximus was despatched with a well equipped army against ARISTONICUS, the brother of ATTALUS.

Although supported by powerful allies, Crassus was defeated in a pitched battle and his army was compelled to flee after suffering heavy losses. Crassus was killed in the battle. Upon hearing of the death of Crassus and the slaughter

131BC

Rome

For the 1<sup>st</sup> time, both  
censors were P. Labeo.

the Censor METELLUS MACEDONICUS had begged men to marry and beget children as a duty to the state, however much of a burden a wife might be, but the number of celibates and childless couples increased more rapidly after he spoke. Children were now luxuries which only the poor could afford.